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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/812,411	03/19/2001	Guy Therien	42390.P10713	2443

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EXAMINER	
WANG, ALBERT C	

ART UNIT	PAPER NUMBER
2115	

DATE MAILED: 03/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/812,411	THERIEN ET AL.	
	Examiner	Art Unit	
	Albert Wang	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,9-11 and 14-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,9-11 and 14-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is responsive to the amendment filed December 16, 2004. Independent claims 1 and 9 are amended; claims 4, 12 and 13 are canceled; claims 6-8 were previously canceled; and new claims 17-20 are added.

2. Applicant's arguments with respect to claims 1 and 9 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 recites the limitation "machine-readable medium of claim 12". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 5, 9-11 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kung et al., U.S. Patent No. 6,574,739 ("Kung"), in view of Malcolm et al., U.S. Patent No. 6,684,341 ("Malcolm"), and Fung, U.S. Patent No. 6,584,571.

As per claim 1, Kung teaches a method comprising:

monitoring processor utilization of a computer system having a processor (fig. 1; col. 2, lines 46-51, circuit 50 monitors perceived processing load of CPU 10), the processor having a plurality of performance levels (fig. 2; col. 4, lines 59 – col. 5, line 10, bands 62-68);

automatically transitioning the processor to a higher performance level if it is determined that the processor utilization has increased above a switch-up level (fig. 2; col. 56, lines 10-31, CPU operating frequency and voltage are adjusted when perceived processing load increases above a threshold level); and

automatically transitioning the processor to a next lower performance level, if any, if it is determined that the processor utilization has decreased below a switch-down level (fig. 2; col. 5, lines 31-37).

However, Kung does not expressly teach transitioning after the processor utilization has remained above the switch-up level, or below the switch-down level, for a specified time. Kung's monitored processor utilization is an average of the perceived processing load over a specified period of time (col. 3, line 51 – col. 4, line 2). With averaging, unnecessary adjustments due to short-lived fluctuations are minimized. Kung further teaches alternative embodiments for monitoring processor utilization could be used (col. 5, line 63 – col. 6, line 4). Malcolm teaches that one possible mechanism for ignoring usage spikes is to make sure processor utilization has remained above a certain level for a specified time (fig. 6, compare processor utilization; col. 7, line 63 – col. 8, line 7, specified lag time). At the time of the invention, it would have been obvious to one of ordinary skill in the art to replace Kung's

averaging mechanism with Malcolm's lag time mechanism. To do so would have been a matter of choosing a known mechanism for ignoring fluctuations.

However, Kung/Malcolm does not expressly teach the specified time as having a first value for transitioning up and a second value for transitioning down. Fung teaches using active and conservation thresholds to prevent needless oscillation between performance levels (col. 3, lines 26-35). Fung further teaches making the active and conservation thresholds unequal so that entry and exit from a given mode is biased (col. 3, lines 35-40; col. 11, lines 28-40). At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply Fung's biasing to Kung/Malcolm's method, so as to have first and second specified times. A motivation for doing so would have been to favor either performance or power conservation over the other.

As per claim 2, Kung teaches the number of performance levels is two (col. 5, lines 38-50).

As per claims 3 and 5, Kung teaches any number of performance levels (col. 5, lines 38-50), which would have corresponding threshold levels.

As per claims 17 and 18, with Fung's biasing, the first specified time would be greater or less than the second specified time.

As per claim 9, Kung teaches a machine-readable medium that provides executable instructions, which when executed by a processing system, cause said processing system to perform a method, the method comprising:

periodically monitoring processor utilization of a computer system having a processor (fig. 1; col. 2, lines 46-51, circuit 50 monitors perceived processing load of CPU 10; col. 4, lines

43-47, periodically read register 29) , the processor having a plurality of performance levels (fig. 2; col. 4, lines 59 – col. 5, line 10, bands 62-68);

automatically transitioning the processor to a higher performance level if it is determined that the processor utilization has increased above a switch-up level (fig. 2; col. 56, lines 10-31, CPU operating frequency and voltage are adjusted when perceived processing load increases above a threshold level); and

automatically transitioning the processor to a next lower performance level, if any, if it is determined that the processor utilization has decreased below a switch-down level (fig. 2; col. 5, lines 31-37)

However, Kung does not expressly teach transitioning after the processor utilization has remained above the switch-up level, or below the switch-down level, for a specified time. Kung's monitored processor utilization is an average of the perceived processing load over a specified period of time (col. 3, line 51 – col. 4, line 2). With averaging, unnecessary adjustments due to short-lived fluctuations are minimized. Kung further teaches alternative embodiments for monitoring processor utilization could be used (col. 5, line 63 – col. 6, line 4). Malcolm teaches that one possible mechanism for ignoring usage spikes is to make sure processor utilization has remained above a certain level for a specified time (fig. 6, compare processor utilization; col. 7, line 63 – col. 8, line 7, specified lag time). At the time of the invention, it would have been obvious to one of ordinary skill in the art to replace Kung's averaging mechanism with Malcolm's lag time mechanism. To do so would have been a matter of choosing a known mechanism for ignoring fluctuations.

However, Kung/Malcolm does not expressly teach the specified time as having a first value for transitioning up and a second value for transitioning down. Fung teaches using active and conservation thresholds to prevent needless oscillation between performance levels (col. 3, lines 26-35). Fung further teaches making the active and conservation thresholds unequal so that entry and exit from a given mode is biased (col. 3, lines 35-40; col. 11, lines 28-40). At the time of the invention, it would have been obvious to one of ordinary skill in the art to apply Fung's biasing to Kung/Malcolm's medium, so as to have first and second specified times. A motivation for doing so would have been to favor either performance or power conservation over the other.

As per claim 10, Kung teaches the number of performance levels is two (col. 5, lines 38-50).

As per claims 11 and 14, Kung teaches any number of performance levels (col. 5, lines 38-50), which would have corresponding threshold levels.

As per claims 15 and 16, Kung teaches a processor-utilization monitoring period (col. 4, lines 43-47) and a range of specified periods to ignore short-lived fluctuations (col. 3, line 51 – col. 4, line 2).

As per claims 19 and 20, with Fung's biasing, the first specified time would be greater or less than the second specified time.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert Wang whose telephone number is 571-272-3669. The examiner can normally be reached on M-F (9:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

aw
March 10, 2005

THOMAS LEE
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